

DERWENT-ACC-NO: 1999-477989  
DERWENT-WEEK: 200110  
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TITLE: Fabrication of capacitors for dynamic random access  
memory cells  
(DRAMs)

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A

PATENT-ASSIGNEE: MICRON TECHNOLOGY INC[MICRN]

PRIORITY-DATA: 1996US-0678729 (July 11, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
PAGES	MAIN-IPC	
US 5930106 A	July 27, 1999	N/A
H01G 004/008		006

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
US 5930106A	N/A	1996US-0678729
July 11, 1996		

INT-CL\_(IPC): H01G004/008; H01G004/06

RELATED-ACC-NO: 2001-089960

ABSTRACTED-PUB-NO: US 5930106A

BASIC-ABSTRACT: NOVELTY - The invention makes use of the new  
ability to form  
thin films of tantalum pentoxide and silicon nitride with  
electrode-limited  
conduction and consistent film thickness and dielectric  
properties. This  
dielectric layer is used in combination with a silicon-germanium  
charge storage  
electrode to give a highly reliable storage capacitor.

DETAILED DESCRIPTION - A capacitor for a dynamic random access  
memory cell  
comprising first and second plates sandwiching a dielectric layer  
(31) of  
preferably tantalum pentoxide or silicon nitride or their  
combination or barium

titanate, which is dominated by electrode-limited conduction. At least one of the electrode plates comprises a silicon-germanium layer as its charging surface.

USE - Capacitor for DRAMs and other memory devices.

ADVANTAGE - The capacitor has improved reliability.

DESCRIPTION OF DRAWING(S) - The drawing shows a section of a DRAM array.

Silicon substrate 10

Field oxide 11

Diffusion region 12

Gate oxide 13

Gate conductor 14

Gate insulator 15

Conductive electrode 21

Dielectric layer 31

Top electrode 41

CHOSEN-DRAWING: Dwg.4/5

TITLE-TERMS:

FABRICATE CAPACITOR DYNAMIC RANDOM ACCESS MEMORY CELL

DERWENT-CLASS: L03 U11 U12 U13 U14

CPI-CODES: L03-G04A; L04-C14A;

EPI-CODES: U11-C05G1B; U12-C02A1; U13-C04B1A; U14-A03B4;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1999-140554

Non-CPI Secondary Accession Numbers: N1999-355771